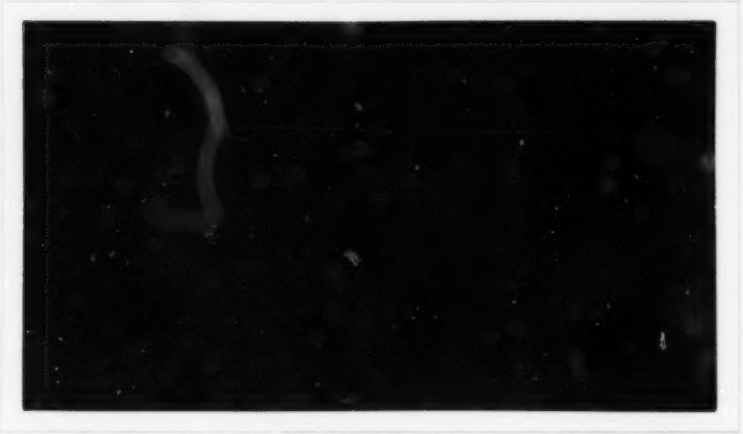


ONTARIO LEGISLATIVE LIBRARY
BIBLIOTHÈQUE DE L'ASSEMBLÉE
LÉGISLATIVE DE L'ONTARIO

Ontario

Legislative Research Service
Legislative Library

Service de recherches
Bibliothèque de l'Assemblée législative

Legislative Building
Édifice de l'Assemblée législative
Queen's Park
Toronto, Ontario
M7A 1A2

(416) 325-3675
(416) 325-3637
Fax (416) 325-3696

ISSN 0835-0299

# CURRENT ISSUE PAPER #118

# PRESERVATION OF AGRICULTURAL LAND

Prepared by:

Anne Anderson and Jerry Richmond
Research Officers
Legislative Research Service

March 1991

# TABLE OF CONTENTS

| | Page No. |
|---|---|
| ISSUE | 1 |
| INTRODUCTION | 2 |
| BACKGROUND | 4 |
| ONTARIO'S PROVINCIAL AND MUNICIPAL PLANNING POLICIES ON AGRICULTURAL LAND PRESERVATION | 8 |
| Ontario's Food Land Guidelines | 8 |
| Provisions of the Planning Act (1983) | 9 |
| Possible Current and Future Directions Respecting Provincial Agricultural Land Policy | 10 |
| Municipal Planning Initiatives Respecting Agricultural Lands | 10 |
| FARMLAND PRESERVATION METHODS | 12 |
| Purchase/Transfer of Development Rights | 13 |
| Purchase of Development Rights | 13 |
| Transfer of Development Rights | 14 |
| Comprehensive Planning | 17 |
| Agricultural Land Commissions | 19 |
| COMPARATIVE ANALYSIS | 20 |
| CONCLUSIONS | 25 |
| FOOTNOTES | 26 |

## ISSUE

The ongoing conversion of farmland to urban and other non-agricultural uses by Ontario's expanding urban centres gives rise to concern. Despite the policies contained in Ontario's Food Land Guidelines and the Planning Act, 51,000 acres of rural land were converted to urban use in the five years between 1981 and 1986, the equivalent of over one acre every hour. When all conversions are considered, a total of 1.5 million acres, or about ten percent of Ontario's farm acreage, was taken out of agricultural production in the decade to 1986.

In view of the continuing decline in farm acreage in Ontario, this paper examines some methods used in Ontario and other jurisdictions to control or prevent the conversion of farmland to other uses. These land use planning methods include provincial and municipal policies, the purchase or transfer of development rights, comprehensive planning and agricultural land commissions.

## INTRODUCTION

The inexorable loss of Ontario's best farmland to urban development is an issue that over the years has given rise to much debate, and various forms of intervention have been proposed to stem this loss. Despite these proposals and the public's belief in the concept of food self-sufficiency, open land and the farming way of life, agricultural land continues to be used for urban development. A recent review article in the Toronto Star on provincial environmental performance stated "Ontario was the worst for building on prime agricultural land . . . 80% of land developed in Ontario between 1981 and 1988 was farmland."[1]

Several factors may account for this tendency. Geographically, most of Ontario's urban centres originated as agricultural service centres and are located in the midst of high quality agricultural soils. Many of the physical characteristics of prime agricultural land, such as flat topography, well-drained soils, moderate climate and access to markets, are also those sought for human habitation and economic development. These lands are the easiest and least costly to provide with roads and piped services for urban development.

Secondly, there can be compelling financial reasons to sell farmland. Farming may be uneconomic because of adverse weather conditions, low commodity prices, high interest rates or an industry structure changing to larger farms that require high capital investment and high debt loads. Also, encroaching urban development leads to increased land prices. These elevated prices cause problems for the preservation of farmland in two ways: by making it more expensive for farmers to acquire tracts of land to farm, and by allowing a farmer a greater return from the sale of agricultural land than from farming it. This is of particular relevance to older farmers concerned with their prospects for financial security and retirement.

Furthermore, the rewards of selling agricultural land are tangible, immediate and directed towards individuals (farmers, developers and homeowners), while the benefits of maintaining farmland tend to be long-term and societal. Although there may be cumulative problems associated with the conversion of farmland, the cost to a farmer or to society of the conversion of any one piece of farmland is minimal. With immediate benefits and no noticeable costs, therefore, there may be no apparent advantage to a farmer in not selling his or her farmland.

This paper assumes that the preservation of agricultural land is a desirable public policy option, and focuses primarily on land-use techniques used to preserve farmland in the face of urban growth pressures. It does not address issues such as:

- Is a stable supply of land necessary given agricultural productivity increases? Is increased productivity sustainable over the long term?
- Why are large tracts of farmland in counties far removed from urban centres being taken out of production?
- From an agricultural perspective, is it preferable to have focused urban growth in a few large areas, or less concentrated growth in many areas? Environment Canada's monitoring indicates that larger urban centres are more efficient at converting rural land to urban use. The rate at which smaller centres urbanized rural land compared with their population increase was four times greater than that of the larger cities.[2]

To stem the loss of farmland requires addressing a wide range of issues, especially understanding and changing the market forces that drive farmers to sell agricultural land. Some issues are beyond the control of the provincial government (for example, world commodity prices or international trade). Others such as the direct regulation of land use or financial assistance, are within the province's jurisdiction.

This paper addresses only one of the possible policy responses; land-use measures which may be used to control the use of agricultural land at the urban/rural boundary. Economic and other market forces adversely affecting agricultural pursuits are not discussed. A range of land-use methods are presented covering different levels of public and private involvement. First, Ontario's current provincial and municipal planning policies concerning the preservation of agricultural land are described. This is followed by an overview of selected methods used by other jurisdictions, in particular:

- the purchase or transfer of development rights;
- comprehensive planning; and
- agricultural land commissions.

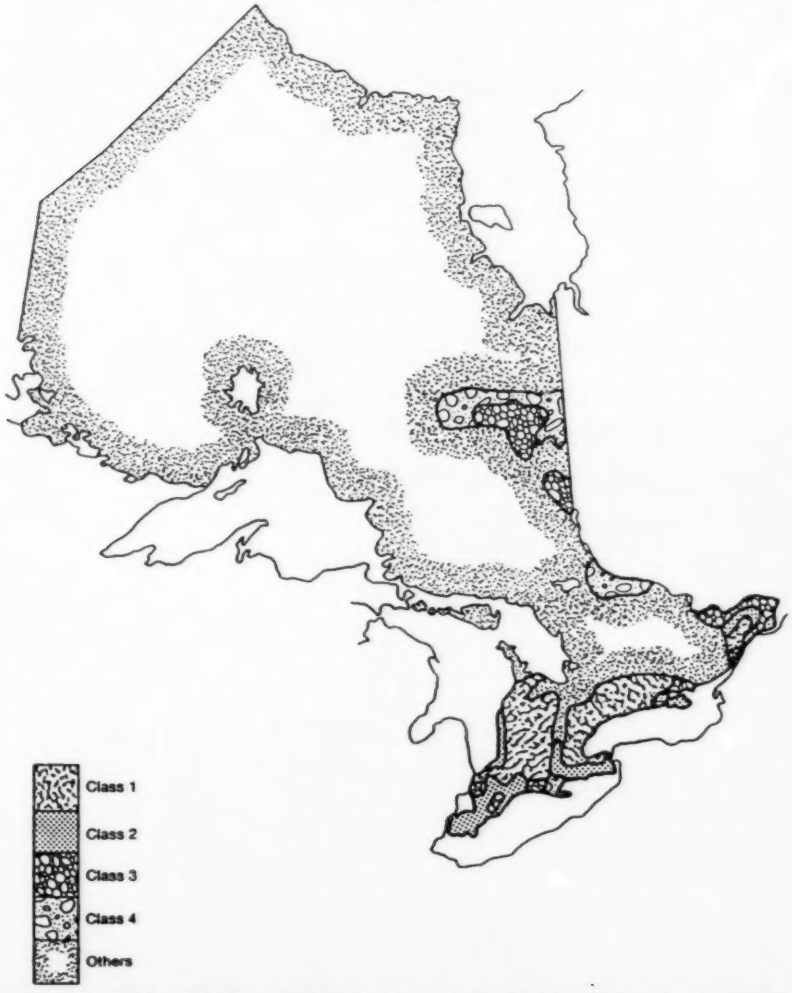
To provide the context for this discussion, the next section gives statistics on the conversion rate of farmland in Canada and around Ontario's urban centres.

## BACKGROUND

Although Canada is the second largest country in the world, its supply of prime agricultural land is limited and unevenly distributed. Over half of the nation's best land for farming (Class 1) is located in Ontario; furthermore, within Ontario, approximately 90% of the province's Class 1 agricultural land is found in the southwest and south central regions.[3] (Of the seven soil capability classes, Class 1 is the best for agriculture, though crop production can be sustained on Classes 1-3.) The approximate distribution of Classes 1 - 3 in Ontario is shown on Map 1.[4]

**MAP 1**

**ONTARIO SOIL CAPABILITY FOR AGRICULTURE**




Source: Environment Canada, Canada Land Inventory, in Ontario, Ministry of Energy and Ministry of Agriculture and Food, Energy and Agriculture, Vol. II, Summary of Research Findings (Toronto: Ontario Energy and Agriculture Policy Committee, 1982), p. 27.

Much of this agricultural land has been under pressure from urbanization. Between 1966 and 1986, Environment Canada monitored the change in land use around 70 large Canadian cities. Among their findings were that, across Canada during those 20 years, almost 750,000 acres[5] of rural land (an area approximately three times the size of the Municipality of Metropolitan Toronto) were converted to urban uses, and over half of this land had a high capability for agriculture.[6]

In Ontario, there are around 14 million acres in farms, almost all in southern Ontario. In 1986, three-quarters of this farm acreage was used productively for crops, improved pasture or summer fallow, with the remainder in woodlots or unimproved pasture.[7]

In the decade between 1976 and 1986, Ontario lost 10% of its farm acreage, with one and a half million acres taken out of farming. Almost two-thirds of this amount (over 970,000 acres) was lost in the second half of the period, between 1981 and 1986,[8] and, given the economic conditions in southern Ontario in the late 1980s, it is likely that more recent data would show the accelerating trend to have continued. Of these 970,000 acres taken out of farmland, over 51,000 acres represented conversion of rural land to urban use, the equivalent of 10,200 acres per year, 28 acres per day or over one acre every hour. Eighty three percent of the 51,000 acres was Class 1-3 land.[9]

Although the loss of farmland due to urbanization has been a high profile issue, it should be borne in mind that, in absolute terms, the amount of farmland lost to urbanization is relatively small compared to the acres of agricultural land taken out of production for other reasons. Not only has there been a reduction of farmland in every county between 1981 and 1986, the greatest reduction occurred in the predominantly rural counties of Simcoe (59,000 acres), Bruce (46,000 acres), Grey (43,000 acres) and Renfrew (41,000 acres);[10] these counties generally contain a lower proportion of Class 1-3 land than the regional municipalities or counties in southwest or south central Ontario. Lower agricultural capability and changing economic and market conditions are possible reasons for these conversions. Compare these acreages with the total 51,000 acres lost to urbanization over the same period. Nevertheless, there are significant issues related to the loss of agricultural land to urbanization arising from factors such as the rate of change, agricultural efficiency and the irreversible nature of conversion.

Table 1 shows the extent of the change in farm acreage between 1976 and 1986 in the regional municipalities around Metropolitan Toronto as well as other regional municipalities and counties containing urban concentrations such as London and Windsor. The regional municipalities of Peel, York, Hamilton-Wentworth and Ottawa-Carleton experienced reductions in farmland at a rate greater than the average 9% in southern Ontario, ranging from 10% to 17%. The regional municipalities in southwestern Ontario, including Niagara, experienced the smallest rate of change.

Table 2 shows the soil capability for agriculture for the same municipalities. Each contains a significantly high percentage of Class 1-3 agricultural land. These municipalities together also have a relatively high concentration of prime agricultural land, with over one-quarter of the Class 1-3 land in southern Ontario compared to 16% of the total acreage.

Although these data do not identify whether or not the parcels of farmland which have been developed are Class 1-3, given the high percentage of prime agricultural land in these municipalities, it is extremely likely that most of the developed land is prime rather than marginal agricultural land. This is not to say, however, that all of this agricultural land was actively being used for farming. While 83% of all the rural land converted between 1981 and 1986 was good agricultural land (Class 1-3), only 37% was being productively farmed; most of the remainder was in transition or had no perceived use.[11] The land in transition may reflect the length of time required to assemble blocks of land for development and to pass through the regulatory and approvals process. It could be concluded that there is a zone around urban areas which represents the time taken for agricultural land to "decay" before being developed. During this time the land is of no immediate productive benefit to either agriculture or the development industry.

It is apparent, based on data to 1986, that there has been a steady loss of farmland around the urban areas. In practical terms, only a proportion of the converted land was actually being farmed immediately prior to conversion. Nevertheless, it is important to note that, although the land may not be used for farming, it is vital to control the urbanization of this prime agricultural land for at least two reasons. Firstly, once the land has been paved over, it is very unlikely that it can be made productive for renewable resources again. Secondly, substituting lower quality agricultural land in more remote areas is less efficient. To replace the output from the Class 1-3

## TABLE 1
## FARM ACREAGE
## MUNICIPALITIES WITH URBAN CONCENTRATIONS*

| | Acreage | | | Change 1976–86 | |
|---|---|---|---|---|---|
| | 1976 | 1981 | 1986 | | |
| | acres | | | acres | % |
| **Adjacent to Metro Toronto:** | | | | | |
| R.M. of Durham | 385,215 | 373,611 | 358,168 | (27,047) | -7% |
| R.M. of Halton | 125,792 | 129,030 | 118,805 | (6,987) | -6% |
| R.M. of Peel | 155,507 | 136,856 | 129,476 | (26,031) | -17% |
| R.M. of York | 247,613 | 248,945 | 210,604 | (37,009) | -15% |
| Others: | | | | | |
| R.M. of Hamilton-Wentworth | 163,832 | 158,519 | 145,083 | (18,749) | -11% |
| R.M. of Niagara | 243,615 | 248,655 | 236,942 | (6,673) | -3% |
| R.M. of Ottawa-Carleton | 353,686 | 355,220 | 317,365 | (36,321) | -10% |
| R.M. of Waterloo | 247,037 | 242,908 | 237,954 | (9,083) | -4% |
| Essex | 356,573 | 349,345 | 335,494 | (21,079) | -6% |
| Middlesex | 649,192 | 635,003 | 623,628 | (25,564) | -4% |
| Subtotal | 2,928,062 | 2,878,092 | 2,713,519 | (214,543) | -7% |
| Southern Ontario | 14,159,974 | 13,706,399 | 12,858,662 | (1,301,312) | -9% |
| Ontario | 15,473,011 | 14,923,380 | 13,953,009 | (1,520,002) | -10% |

* excluding Metropolitan Toronto

Source: Statistics Canada, Census of Agriculture, in Ontario, Ministry of Agriculture and Food, "Agricultural Statistics for Ontario, 1988," Table 30.

## TABLE 2
## SOIL CAPABILITY FOR AGRICULTURE
## MUNICIPALITIES WITH URBAN CONCENTRATIONS*
## SOUTHERN ONTARIO, 1975

| | Class 1 | Total Class 1-3 | Total Acreage | Class 1/ Total | Class 1-3/ Total |
|---|---|---|---|---|---|
| | acres | | | % | % |
| **Adjacent to Metro Toronto:** | | | | | |
| R.M. of Durham | 261,962 | 396,132 | 615,040 | 43% | 64% |
| R.M. of Halton | 85,265 | 160,650 | 236,800 | 36% | 68% |
| R.M. of Peel | 145,564 | 221,845 | 302,720 | 48% | 73% |
| R.M. of York | 182,563 | 296,044 | 433,920 | 42% | 68% |
| Others: | | | | | |
| R.M. of Hamilton-Wentworth | 77,756 | 202,477 | 275,200 | 28% | 74% |
| R.M. of Niagara | 40,561 | 383,730 | 457,600 | 9% | 84% |
| R.M. of Ottawa-Carleton | 64,624 | 351,117 | 681,600 | 9% | 52% |
| R.M. of Waterloo | 86,950 | 213,059 | 336,000 | 26% | 63% |
| Essex | 33,550 | 408,559 | 460,160 | 7% | 89% |
| Middlesex | 327,809 | 722,253 | 830,720 | 39% | 87% |
| **Subtotal** | 1,306,604 | 3,355,866 | 4,629,760 | 28% | 72% |
| **Southern Ontario** | 4,800,523 | 12,829,639 | 29,468,160 | 16% | 44% |
| **Urban/southern Ontario** | 27% | 26% | 16% | | |

* excluding Metropolitan Toronto

Source: Ministry of Agriculture and Food, "Acreages of Soil Capability Classes in Ontario," 1975

agricultural land converted in southwestern Ontario between 1981 and 1986 could require approximately two and one half times as much land, involve more limited types of agricultural products and incur higher production, energy and transportation costs.[12] This replacement could also create conflict with other land uses such as forestry and wildlife.

The loss of farmland to urban or industrial use periodically causes concern in Ontario. In the 1970s, there was much debate over conflicting land use in the Niagara fruit-growing region; more recently, the rapid development around Metropolitan Toronto has caused public concern. The next section describes the current situation in Ontario with respect to the regulations and guidelines relating to the preservation of agricultural land.

## ONTARIO'S PROVINCIAL AND MUNICIPAL PLANNING POLICIES ON AGRICULTURAL LAND PRESERVATION

### Ontario's Food Land Guidelines[13]

The 1978 Food Land Guidelines (FLG), which are administered by the Land Use Planning Branch of the Ministry of Agriculture and Food, are the major Ontario government policy respecting the preservation of agricultural land. The Guidelines outline procedures for the identification and designation of areas for long-term agricultural use to be used by local municipalities in their exercise of local planning powers under the Planning Act. The Guidelines are also used by the Ministry of Agriculture and Food in its review and comment upon local planning activities and decisions.[14] The Planning Act establishes firm procedures for review and approval of local planning documents and decisions by the provincial government through the Ministry of Municipal Affairs.

The FLG have been the subject of debate; the major point of concern has focussed upon the fact that this policy has not been incorporated into binding provincial legislation. Critics have charged that the food land document is only a guideline and that its implementation depends upon incorporation of the Guidelines' principles into land-use planning controls exercised by municipalities.[15] It has been claimed that:

> Without an overall [provincial] policy guide, local zoning and official plans are inadequate for the task. These planning tools are oriented more towards controlling urban development and

> are not aimed at the preservation of agricultural land. Municipalities have traditionally treated rural land as a holding category for future development.[16]

A later section of this paper reviews the efforts of the Ontario Liberal government to develop a Foodland Preservation Policy Statement under the provincial policy statement provisions of the Planning Act (section 3).

**Provisions of the Planning Act (1983)**

Provisions of the Planning Act as revised in 1983 allow the provincial government or local municipalities to adopt policies or plans which may address the preservation of agricultural land. Section 2 of the Planning Act specifies that the Minister of Municipal Affairs "will have regard to . . . matters of provincial interest such as, the protection of the natural environment, including the agricultural resource base of the Province . . . ." This section gives the Minister the general authority to assess the impact of local municipal planning and development activities upon the province's agricultural resources. Section 3 of the Planning Act allows the Minister, with Cabinet approval, to issue policy statements "on matters relating to municipal planning that . . . are of provincial interest."

In February 1986 the former Liberal government, through the Ministers of Agriculture and Food and Municipal Affairs, released a proposed Foodland Preservation Policy Statement[17] which would have replaced the Food Land Guidelines. The government received more than 460 submissions from interest groups, organizations and municipalities on this proposed policy statement.[18] Submissions on this matter were made to both Cabinet and the Liberal caucus. However, during its term the Liberal Cabinet did not adopt this policy statement on agricultural land. Indications are that a proposed rural severance policy to restrict the creation of additional residential parcels in agricultural areas was a major unresolved issue of concern.[19] The proposed Policy Statement stated:

> In order to prevent fragmentation of the agricultural land base and to avoid conflicts with normal farm activity, it is Provincial policy to restrict the creation of residential lots, including farm-related residential lots, within designations for prime agricultural land. Non-farmers purchase such lots and may create problems for surrounding farm operations.

> It is Provincial policy that official plan policies should allow for alternatives to residential lot severances in order to provide for farm housing needs. These alternatives would include a second residence on the farm, life leases, retirement in nearby villages and hamlets, etc.[20]

Another issue was the "horizon" or time frame for urban growth areas around cities. The Policy Statement proposed a 10-year urban growth horizon around cities. A number of respondents to the proposed Policy Statement who addressed this issue maintained that a 10-year urban growth envelope was too short.[21]

**Possible Current and Future Directions Respecting Provincial Agricultural Land Policy**

Staff within the Ministry of Municipal Affairs are currently working on the development of an "Umbrella Policy Statement." Such a policy, subject to direction from the new Ontario government, could consist of an integrated statement respecting provincial interests in land use, including agricultural lands.[22] An initiative of this nature, along with other recent studies respecting a Greenlands Strategy for the Greater Toronto Area, the Watershed Report of the Royal Commission on the Future of the Toronto Waterfront, and the Greater Toronto Area Urban Structure Concepts Study, could lead to a resurgence of regional, provincially-initiated planning and coordination during the nineties.[23]

**Municipal Planning Initiatives Respecting Agricultural Lands**

Under the authority of the Planning Act, municipalities may develop land-use policy respecting the preservation of agricultural land.

Municipalities may administer these policies in a responsible manner which seeks to maintain agricultural activities beyond areas slated for urban development, where natural and economic conditions have led to the establishment of a strong agricultural community. Noteworthy examples of municipal planning policies to preserve agricultural land are found in the official plans of the Regional Municipalities of Waterloo and Halton, and the Town of Markham.[24] In addition, these municipalities use their review of local zoning, subdivision and development proposals to administer their official plans in a manner which seeks to preserve agricultural land.

The Regional Municipality of Waterloo "Official Policies Plan" states that:

> . . . large areas of prime farm land in the Region outside of those areas designated for urban settlement will be protected through the use of strict controls on development and settlement patterns.[25]

Outside of the main Kitchener-Waterloo and Cambridge urban areas, this plan designates on a map this region's "agricultural resource policy areas" and states that:

> . . . the priority within these areas is for agricultural pursuits and that any legal changes in the use of land to other uses will be severely restricted, subject to the policies in this Plan and Area Municipal Official Plans. The Agricultural Resource Policy Area A contains mainly Class 1 and 2 agricultural lands being the prime agricultural lands. Agricultural Resource Policy Area B contains mainly Class 3 and some Class 4 agricultural lands which are generally in stable agricultural use as defined on the soils maps of the "Canada Land Inventory" covering this Region.[26]

The Halton "Official Plan" contains the policy to "recognize, encourage and protect agriculture as an important industry in Halton" and endorses the Ontario Food Land Guidelines.[27] It recognizes the northern 80% of the region, primarily north of Highway 5, as rural-agricultural.

The revised Town of Markham "Official Plan" states that:

> . . . the Town is seeking to preserve a large, continuous area of prime land [to the north and east of the urban area], to be available for agriculture over the long term, and within which farming activity can take place with a minimum of disruption from competing or incompatible land uses. Additionally, a greater degree of certainty regarding the use of these prime agricultural lands for farming on a long-term basis should encourage the farming community to maintain long-range farm planning and soils management.[28]

Furthermore, within the lands designated agricultural to the north and east of the designated urban area, the "primary and predominant use of the land shall be for farming activity" and "new, non-farm residential development shall be strongly discouraged."[29]

These three municipalities represent examples of local agencies which recognize the value of a defined agricultural land base. Other local municipalities may attach a lesser priority to this issue. The question arises whether a stronger provincial

agricultural land policy would prompt greater local attention to agricultural land preservation and also provide a stronger and clearer statement of provincial intentions to guide the land-use planning actions of provincial ministries and agencies.

In the Metropolitan Toronto and surrounding area, the various upper-tier metropolitan and regional municipalities and their component area municipalities have attached different priorities to efforts to prepare or update metropolitan or regional official plans. Metropolitan Toronto, Halton and Durham Regions are conducting major reviews and updates of their official plans. York and Peel Regions, which are immediately adjacent to Metropolitan Toronto and are experiencing significant growth pressures, have never adopted regional official plans -- only draft versions have been prepared.[30]

It might be argued that the absence of such plans in Peel and York Regions hinders region-wide coordination and efforts to protect high-capability agricultural areas within these rapidly-urbanizing municipalities. An updated and stronger provincial agricultural land policy statement may promote stronger regional-level attention to planning for agricultural land.

## FARMLAND PRESERVATION METHODS

As a result of the ongoing debate that has been taking place in Ontario, the public may be aware of the province's existing farmland policies such as agricultural zoning, tax incentives and right-to-farm legislation. Various jurisdictions in both Canada and the United States have taken different approaches and implemented different techniques to address the problem of the uncontrolled loss of agricultural land, and it may be useful to examine these land use policies in order to broaden the debate and seek further ideas on farmland preservation methods.

These other methods include both land use and tax incentive programs to reduce the relative attractiveness of the farmland for development, offset additional burdens on the farmer caused by urbanization, and prevent changes in land use. Approaches such as the use of development rights, comprehensive planning and agricultural land commissions, are not practiced in Ontario and these are described in some detail below.

**Purchase/Transfer of Development Rights**

One of the issues facing farmers around urban areas is the land price differential, with the value of their land for development considerably in excess of its value for farming. If farming income is relatively low, therefore, or if succeeding generations do not wish to farm, there is a very high incentive to buy financial security by selling the farm for development.

Some American states have addressed this issue by using development rights programs. Development rights effectively are the difference in value of the farmland from its value for an alternative use. These development rights are separated from ownership rights and may be purchased by the government or transferred on the private market. The owner agrees to keep the land in agriculture, retains all other rights of ownership and the remaining value of the land is the "farm use" value. In this way, land is secured for agricultural use and farmers financially compensated for the lost "development" value of the land.

Purchase of Development Rights

The purchase of development rights (PDR) involves the designation, generally by a public body such as a land preservation committee, of areas of land to be preserved, and the purchase of the development rights on this land by the government. The cost varies considerably, but typically has been between $1,000 and $3,000 (US) per acre. Financing the government purchase is achieved through issuing state and local bonds and from general taxation revenue.

Maryland is an example of a state that has used PDR since 1977.[31] At that time, an agricultural land preservation program was created, to be administered by the Board of Trustees of the Maryland Agricultural Land Preservation Foundation. Participation in this program is voluntary on the part of landowners.

Local agricultural districts are established with the cooperation of local counties and landowners. Districts must be of a minimum size of 100 contiguous acres and be on land of sufficient agricultural capability. An agreement to establish an agricultural district is recorded in the land records at the county level and requires that the land be kept in agriculture for at least five years. It also conveys to the landowner the right to

sell a development rights easement to the Maryland Agricultural Land Preservation Foundation at an agreed price. The maximum value of the easement is the difference between the land's agricultural use value and its fair market value as determined by appraisals. The purchase of development rights is in perpetuity; however, purchased easements may be reviewed after 25 years and if profitable farming is found not to be feasible, an easement may be terminated by repurchase.

In most states funding is provided through bond issues: New Jersey's Farmland Preservation Program, for example, was initially funded in 1981 with a $50 million bond issue; Pennsylvania's legislation contains provision for a state bond issue of up to $100 million between 1988 and 1998.[32] Unlike most other states, however, Maryland's Agricultural Land Preservation Fund is derived from tax revenues. In fiscal 1989, the Fund contained $23 million provided by the state, with county matching funds providing an additional commitment of $1.8 million. The major source of revenue for this fund is an agricultural land transfer tax levied when agricultural land is converted or sold for non-agricultural use. In most cases the revenues derived from this tax are split with two-thirds going to the state and one-third allocated to the counties.

By the end of fiscal 1989, 165,000 acres of farmland in Maryland had been enrolled as agricultural districts; development rights had been purchased for 534 properties providing protection to 79,000 acres. In 1989 the easement acquisition program cost $12 million, with an average acquisition cost of $1,189 per acre. However, despite the success of Maryland's PDR program, the amount of farmland converted to other uses has continued to increase at a greater rate; in 1989, for example, 10,000 acres were preserved compared to 40,000 acres converted.

Recent review information on American PDR programs indicates:

> most participating farmers said they used the payments to reinvest in their farms. They also said the PDR programs had a stabilizing impact on agriculture in the area, since they enabled farmers to realize development equity without having to sell their land.[33]

## Transfer of Development Rights

The transfer of development rights (TDR) is based on a similar concept that separates the privilege to build or develop the land from the remaining real property interests of

the owner, but differs from PDR in that the development rights are sold on the private market rather than purchased by the government. While under PDR programs the development rights are purchased and retired, under TDR they are purchased and used in another location. An advantage to TDR is that it recognizes that growth exists and attempts to redirect rather than fight it.

In using the transfer of development rights, the government must designate two zones: a sending area which is down-zoned (i.e., farmland to be preserved) and a receiving area where the government wants to encourage development. Farm owners in the sending area are accorded development rights which can be sold on the private market to developers in the receiving area for density increases above the level otherwise allowed. (Similar systems are used in some cities in Ontario where commercial or residential developers may provide park spaces or other public benefits in return for increased density levels.) The calculation of the number of development rights a farmer is allowed can be very complicated, involving productivity levels and other factors, or it can simply be a designated number of rights per acre.

Montgomery County, Maryland is on the northern fringe of the Washington, D.C. Metropolitan Area with an area of 317,000 acres and population of 700,000. On a local initiative, it began a transfer of development right program in 1981.[34] The County did not require special enabling legislation for this program but used its general zoning powers. The primary objective of the TDR component of this program was to preserve local agricultural resources and also thereby enhance the provision of open space. This local program is administered by the state-chartered Maryland National Capital Park and Planning Commission which has jurisdiction in two counties on the fringe of Washington, namely Prince George's and Montgomery County.

Montgomery County instituted its TDR program in conjunction with agricultural zoning. Across the county an agricultural zone with an area of 89,000 acres was designated. Permissible basic residential development densities in this agricultural zone were reduced from one house per five acres to one house per 25 acres. To compensate for this "down-zoning," the County set up a TDR system whereby farmers could sell development rights for this previously higher density to developers in other areas. The TDR program therefore provided a system of financial compensation for farmers in exchange for more intensive development within urban "receiving" areas in the county such as Chevy Chase, Silver Spring and Bethesda.

Through a variety of local and state programs, about 29,000 acres of agricultural land have been protected in Montgomery County: some 24,000 acres through the TDR program; 1,600 acres under the Maryland purchase of development right program; 1,800 acres under the Maryland Environmental Trust program begun in 1967, where development rights are donated for a federal/state income tax deduction; and 1,000 acres under a County purchase of development right program. This latter program began in 1989 with a $3 million/fiscal year allocation from the County.

These local and state programs are seen to have worked effectively and Montgomery County and Maryland lead the US in the application of these concepts. In 1988 Montgomery County received a national award from the American Farmland Trust in recognition of these programs to support agriculture. These programs have also enhanced economic diversity and the preservation of open space.[35]

A recent review article argued that:

> three elements must be present [to enact a successful TDR program]: a strong development market, a strict exclusive agricultural zoning district with at least 20-acre minimum lot sizes and a sophisticated planning department.[36]

And, of course, there must also be the local political will to back the program. Despite Maryland's success, neither PDR nor TDR are without problems. PDR is expensive, requiring large amounts of public money, and a fiscally-constrained government is therefore limited in the number of acres of farmland it can preserve through this program. TDR requires very sophisticated planning in being able to forecast growth accurately and to balance the appropriate number of rights in the "sending" and "receiving" areas to create a market for the development rights at a price acceptable to both buyer and seller.

In a February 1990 report on preserving agricultural land prepared as part of its Regional Official Policy Plan review, the Planning Department of the Regional Municipality of Niagara reached the following conclusion respecting the purchase or transfer of development rights:

> First, neither program is a panacea for agricultural land preservation and neither program should be viewed as a substitute for other government programs intended to promote a healthy and competitive agricultural industry.

Furthermore:

> Based on the case studies, it would appear that the most effective agricultural preservation programs combine a wide variety of techniques and agricultural industry support programs. No single program is adequate in itself to protect agricultural land.
>
> In Ontario, Provincial legislation would be required in order to implement a purchase or transfer of development rights program. There may very well be legal difficulties and complications which may only be revealed through a more detailed examination of the legal and constitutional basis for the programs in this Province.
>
> Whatever program or set of programs is considered here, it is important that Niagara's unique needs and situation be considered before adopting an approach from elsewhere. What might work well in Montgomery County, Maryland may be entirely inappropriate in Niagara.[37]

**Comprehensive Planning**

Comprehensive planning is a process which leads towards the adoption of an interrelated set of policies concerning such matters as land use, transportation, housing, public facilities and economic and social issues. As its name suggests, comprehensive planning provides the overall framework to ensure the coherence and integration of a variety of public policies. It may include a plan designating particular land uses and a program for providing public facilities such as transportation and sewers. In most American states the plan in itself is not legally binding on governments or individuals, but several states require that zoning and major public facilities be consistent with comprehensive plans.[38]

A well-known example of comprehensive planning is found in the state of Oregon. In 1973, Oregon enacted The Oregon Land Use Act which required all of Oregon's 242 cities and 36 counties to adopt comprehensive plans and land-use regulations. The Act specified planning concerns and standards that had to be met, and which are formally set out as 19 Statewide Planning Goals (see Table 3). These goals constitute the framework for a statewide program of land-use planning and provide state policies on land use, resource management, economic development and citizen involvement. They are detailed, mandatory and have the force of law. There is no single state land-use plan, but rather a mosaic of local plans, each of which receive state approval.

**TABLE 3**
**OREGON'S STATEWIDE PLANNING GOALS**

1. Citizen Involvement
2. Land Use Planning
3. Agricultural Lands
4. Forest Lands
5. Open Spaces, Scenic and Historic Areas, and Natural Resources
6. Air, Water and Land Resources Quality
7. Areas Subject to Natural Hazards
8. Recreation Needs
9. Economy of the State
10. Housing
11. Public Facilities and Services
12. Transportation
13. Energy
14. Urbanization
15. Willamette Greenway
16. Estuarine Resources
17. Coastal Shorelands
18. Beaches and Dunes
19. Ocean Resources

**Source:** Oregon Land Conservation and Development Commission, Oregon's Statewide Planning Goals 1985.

The main farmland protection provisions in Oregon's Statewide Planning Program are found in Goals 3 and 14. Goal 3 requires local governments to identify agricultural lands based on soil capability and to adopt policies to preserve it. Agricultural land must be placed under "exclusive farm use" zoning (EFU); this designation limits the ways in which the land can be used or divided, so that the development of non-farm dwellings, for example, is tightly controlled. Urban growth must be separated from agricultural lands by buffer or transitional areas of open space. Approximately 17 million acres have been zoned EFU, about half the privately-owned land in the state. Goal 14 provides "for an orderly and efficient transition from rural to urban land use." It requires cities to adopt urban growth boundaries, and to consider farmland protection in deciding the location of these boundaries, thus protecting farmers from having to compete with urban sprawl.

In addition to the Planning Program, Chapter 215 of Oregon's statutes established the standards for the EFU zones. For example, it contains right-to-farm laws and tries to discourage the development of hobby farms. Under Chapter 308, farms are taxed on their farm value rather than on higher values based on development potential.

An evaluation of Oregon's farmland protection program in the Journal of the American Planning Association concluded that the program appears to be successful at keeping farmland from being converted to non-farm use. At the same time, there has been a proliferation of hobby farms, which may be due in part to the fact that local administration of this policy has been sporadic and that enrolment in the property tax deferral program is easy, with no application nor income tax test required.[39]

**Agricultural Land Commissions**

British Columbia and Quebec are examples of provinces that have established provincial agricultural land commissions as special purpose land-use planning bodies to designate and then regulate the conversion of such lands to non-agricultural pursuits. British Columbia is highlighted in this paper, having had a provincial system of land-use control since 1973. Quebec's agricultural land commission legislation was enacted in 1978 and appears similar to the system on the west coast.[40] These provincial commissions serve to establish an overriding province-wide system of land-use control devoted to protecting the limited agricultural land resource base of the province.

In British Columbia, the basic system of agricultural land reserves, or agricultural zones designated on a province-wide basis, has been retained by successive provincial governments. The 1988 Annual Report of the Agricultural Land Commission notes:

> There is clear evidence that a major segment of the population has been strongly in support of the need to preserve the limited agricultural resource of this Province. That resource amounts to only 4.9% of the Provincial land area, or about 4.7 million hectares.
>
> Canadians as a whole and British Columbians in particular are coming to the realization that agriculture is an important industry - and relative to other resource-based industries, one of the most consistent over the years, and that translates itself into steady employment, investment and products . . . .
>
> Farmers continue to be supportive of the farmland preservation legislation when coupled with other agricultural support programs because the benefits inherent in delineating and defending a farm community are clearly understood. Creating an Agricultural Land Reserve has had the effect of providing long-term stability to the farm community. Farmland is now protected from encroachment of non-farm uses such as housing and industry. This gives a farmer more confidence in investing to improve his land and his operation, making his operation more effective overall.[41]

The Agricultural Land Commission Act establishes a provincial-regional zoning system specifically devoted to the designation of agricultural lands. The primary:

> object of the legislation is to preserve agricultural land and to protect it from encroachment of non-farm uses and subdivisions. This goes beyond measures to control land under local agricultural and rural zoning bylaws which are generally effective only so long as there is not a routine request to use more farm land for non-farm purposes .... The program provides for a provincially-administered land-use regulation system for farmlands called Agricultural Land Reserves that are similar to zoning, but overlaying the zoning system used by local government.[42]

At the provincial level, cumulative statistics compiled by the Commission on the change in the area of the reserves between 1974-87 demonstrate the maintenance of the integrity of the agricultural reserves. Total area of the reserves at time of designation, generally in the mid-1970s, across the province was 4.72 million hectares. As of January 1, 1988, the total area of the reserves was 4.69 million hectares.[43] In many more remote regions there were significant increases in the area of the reserves. In the Peace River-Liard district, for example, large areas were added to the agricultural reserve during 1987 with the inclusion of Crown agricultural lease properties.[44] In other regions with significant urban growth pressures, such as Capital (Victoria), Nanaimo, North Okanagan and Greater Vancouver, there were moderate reductions in the area in reserves between 1974 and 1987.[45]

In conclusion, the land commission legislation in British Columbia provides for a systematic review of individual applications for the inclusion/exclusion of lands within the province's agricultural land reserves.

## COMPARATIVE ANALYSIS

Table 4A provides a summary assessment of the techniques used or proposed in Ontario to act to preserve agricultural land. A comparative analysis is also included of techniques used in other jurisdictions (Table 4B). Eight criteria are used to conduct this analysis.

## TABLE 4A

## AGRICULTURAL LAND PRESERVATION TECHNIQUES:

### Comparative Analysis: Ontario

| COMPARATIVE CRITERIA | TECHNIQUES | | |
|---|---|---|---|
| | Food Land Guidelines | Foodland Preservation Policy | Local Official Plans |
| **Enabling Legislation in Ontario** | Adopted as government policy | Possible pursuant to s. 3 Planning Act | Possible pursuant to s. 17 Planning Act |
| **Public Cost** | Negligible, except for administration | Negligible, except for administration | Negligible, except for administration |
| **Administration** | Handled by Branch within OMAF* | Would be administered by OMAF and Municipal Affairs | Administered by local planning departments and Councils |
| **Effectiveness** | Moderately effective | Improved provincial effectiveness has been predicted | May be effective locally; dependent on local Council support |
| **Comprehensiveness** | Province-wide impact | Province-wide impact; sets direction for local planning | Where adopted may set or reflect direction for local and provincial planning policy |
| **Extent of Public/Interest Group Support Required** | Existing policy | Consultation and support advisable | Local consultation and support advisable |
| **Municipal Involvement** | Negligible | Advisable | Essential |
| **Financial Compensation to Landowners** | Not applicable | n.a. | n.a. |

*OMAF = Ontario Ministry of Agriculture and Food

## TABLE 4B

## AGRICULTURAL LAND PRESERVATION TECHNIQUES:

### Comparative Analysis: Other Jurisdictions

| COMPARATIVE CRITERIA | TECHNIQUES | | | |
|---|---|---|---|---|
| | Purchase of Development Rights | Transfer of Development Rights | Comprehensive Planning | Agricultural Land Commission |
| **Enabling Legislation in Ontario** | Would require enabling legislation | Would require enabling legislation | Possible pursuant to s. 3 Planning Act | Would require enabling legislation |
| **Public Cost** | Would require substantial public funding or borrowing | Negligible except for provincial and local administration | Negligible except for provincial and local administration | Moderate, new special purpose administrative body required |
| **Administration** | Would require provincial and local administrative and appeal bodies | Would require specialized local administration and arbitration | Would likely be administered by Municipal Affairs with interministerial support | Special purpose board, administration and appeal body required |
| **Effectiveness** | Firm protection; area of coverage limited by cost | Firm protection; limited localized extent | Effective in establishing province-wide direction | Effective in establishing province-wide special purpose agricultural zoning |
| **Comprehensiveness** | Effective in specific areas designated | Effective in specific areas designated | Province-wide impact; sets direction for provincial and local planning | Province-wide impact; special purpose land use control which augments local planning |
| **Extent of Public/Interest Group Support Required** | Local consultation and support advisable | Local consultation and support advisable | Province-wide consultation and support advisable | Province-wide consultation and support advisable |
| **Municipal Involvement** | Essential | Essential | Advisable | Advisable |
| **Financial Compensation to Landowners** | Yes; to directly affected property owners | Yes; to directly affected property owners | n.a. | n.a. |

The Food Land Guidelines and local official plans are the primary land-use planning measures currently used in Ontario to promote agricultural land preservation. An unresolved policy issue is whether a foodland preservation policy statement should be put into place under the Planning Act to strengthen provincial policy in this area. There could also be increased provincial efforts at broader-scale regional coordination.

Of the techniques used in other jurisdictions, the purchase or transfer of development rights appears to provide the firmest protection of agricultural land, albeit of relatively small acreages. They are also the only techniques surveyed which address the issue of differential land prices as one of the driving forces behind the urbanization of agricultural land. Both PDR and TDR require municipal involvement and are unlikely to work without public support. Neither are easily implemented; PDR involves significant public cost while TDR is complex to set up.

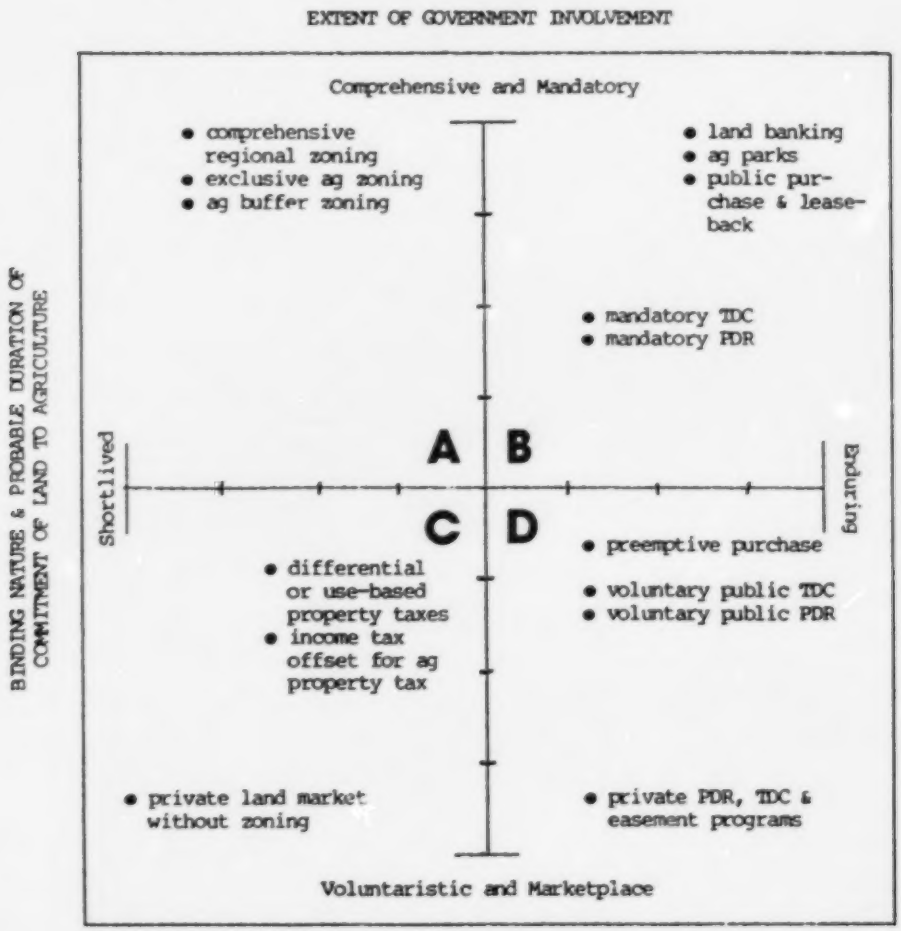
Comprehensive planning is more like the zoning process in Ontario, but with the principles firmly established at the provincial level. Its strength arises from its coordination of all facets of land use so that policies in one area or government department do not conflict with those in another. Some local autonomy is maintained in the application of those principles. Were efforts to develop an "umbrella policy statement" pursued, they could result in an Ontario variety of comprehensive provincial planning.

Agricultural land commissions or land reserves benefit from the increased focus at the provincial level and may work well to provide province-wide protection of farmland. They do not, however, address the reasons lying behind the conversion of farmland.

If agricultural land is to be preserved from urbanization, what are the most effective ways to do this? How can governments select the most appropriate methods to use? The California Farmlands Project developed a classification system for farmland protection mechanisms that may be helpful in making such decisions. Under this system, farmland protection is classified in two dimensions: the duration of the commitment of land to agriculture, and the extent of government involvement (Table 5). The conventional approach (Quadrant A) is for high government involvement,

# TABLE 5

## TWO DIMENSIONS OF FARMLAND PROTECTION: DURATION AND EXTENT OF GOVERNMENT INVOLVEMENT




Source: Daniel Mazmanian with Thaddeus C. Tryzna, Issues and Alternatives: Reasons and Methods for Protecting California Farmlands, California Farmlands Project, Working Paper #3 (Claremont, Ca.: California Institute of Public Affairs, 1983), p. 15.

Note: TDC = Transfer of Development Credits

PDR = Purchase of Development Rights

mandatory requirements and a short-term effect. Ontario's agricultural zoning, British Columbia's agricultural land commission and Oregon's comprehensive planning are potentially in this quadrant. The purchase or transfer of development rights as described in this paper are in the opposite quadrant (Quadrant D), being both voluntary and in perpetuity. Quadrant B, with high government involvement and long-term effects tends to be the choice of farmland protectionists while Quadrant C may be preferred by farmers, as having the least government intervention and most personal flexibility to sell or convert land.[46]

The most appropriate methods (with therefore the highest likelihood of success) may depend on their location in a quadrant which has the highest acceptance from both farmers and the public. Alternatively, a range of methods covering more than one quadrant may provide long-term flexibility to respond to changing social and economic conditions.

## CONCLUSIONS

The limited amount of the highest capability agricultural land is located in the southern part of the province, in close proximity to Ontario's urban centres. If the preservation of a finite resource such as agricultural land is seen to be desirable, it appears that Ontario's present land use policies need to be strengthened or supplemented. Several alternative approaches to agricultural land preservation are described. A key factor in the success of any public policy aimed at preserving farmland from urbanization, whether it be strengthened Food Land Guidelines and/or alternative mechanisms, is that it must be placed in the broader context of Ontario's economic and social priorities and policies.

The question of whether and how to preserve agricultural land around these urban centres is an issue that cannot be debated in isolation from the larger questions concerning the agricultural community and province-wide planning, and overall social trends and pressures. The need for housing in and around cities, farmers' needs for an adequate financial return, the desire to preserve farmland and its associated way of life, and food self-sufficiency, are all components to be weighed in local land-use decisions. Consultations with all involved may show that the strongest argument for preservation of farmland relates to intangible "quality of life" issues rather than economic justifications.

## FOOTNOTES

[1]Anne McIlroy, "Report card flunks provinces on environment," Toronto Star, 20 October 1990.

[2]Canada, Environment Canada, Urbanization of Rural Land in Canada, 1981-86, SOE Fact Sheet No. 89-1 (Ottawa: Supply and Services Canada, 1989), p. 9.

[3]Ibid., p. 6.

[4]Soil capability classes are determined according to the physical factors influencing land use. These factors include soil conditions, slope, stoniness, climate and drainage. There are seven classes of mineral soils plus organic soils and unmapped areas. Class 1 is highly suitable for cultivation and can sustain continued production of moderate- to high-yield crops. Classes 1-3 are considered suitable for sustained production of common field crops if specified management practices are observed.

[5]The acreages in this paragraph have been converted from hectares to acres on the basis of 1 hectare = 2.47 acres.

[6]Environment Canada, Urbanization of Rural Land, p. 1.

[7]Ontario, Ministry of Agriculture and Food, Agricultural Statistics for Ontario, 1988 (Toronto: The Ministry, 1989), Tables 30 and 32.

[8]Ibid.

[9]Ibid., p. 2.; and supplementary notes, "Accuracy of Statistics, Rural to Urban Land Conversion, 1981-86," table entitled "Agriculture Capability of Former Rural Land Converted to Urban Uses and Agro-Climatic Resource Index Replacement Values, 1981-86, Canada."

[10]Derived from Ministry of Agriculture and Food, Agricultural Statistics for Ontario, 1988, pp. 26 and 28.

[11]Ibid., supplementary notes, table entitled "Former Land Activity of Rural Land Converted to Urban Uses, 1981-86, Canada."

[12]Environment Canada, Urbanization of Rural Land, p. 8.

[13]Ontario, Ministry of Agriculture and Food, Food Land Guidelines: A Policy Statement of the Government of Ontario on Planning for Agriculture (Toronto: Government of Ontario, 1978).

[14]Ibid., pp. 24-25.

[15]"Food for the Cities: Disappearing Farmland and Provincial Land Policy," Civic Affairs (June 1977): ix; and "The Policy and Legislative Response to Loss of Agricultural Land in Canada," Ontario Geography 18 (1981): 94-95.

[16]D. Harrison and M. Noonan, Agriculture: Neglected in Planning? Occasional Paper No. 1 (Toronto: Department of Urban and Regional Planning, Ryerson Polytechnical Institute, March 1980), p. 11.

[17]Ontario, Ministry of Agriculture and Food and Ministry of Municipal Affairs, Foodland Preservation Policy Statement (Toronto: The Ministries, 1986).

[18]Based upon extensive discussions with Tonu Tosine, Associate Director (Southwestern, Central and Northern Ontario), Land Use Planning Branch, Ontario Ministry of Agriculture and Food.

[19]Ibid.

[20]Ministry of Agriculture and Food et al., Foodland Preservation Policy Statement, p. 4.

[21]Discussed with Mr. Tosine.

[22]Information based upon extensive discussions with Wendy Noble, Director, Municipal Planning Policy Branch, Ontario Ministry of Municipal Affairs.

[23]The specific names of the studies are:

- Ontario, Greater Toronto Area Greenlands Strategy, Space for All: Options for A Greater Toronto Area Greenlands Strategy, Ron Kanter, MPP, St. Andrew-St. Patrick (Toronto: Queen's Printer, 1990).

- Canada, Royal Commission on the Future of the Toronto Waterfront (David Crombie, Commissioner), Watershed: Interim Report (Ottawa: The Commission, August 1990).

- Ontario, Greater Toronto Coordinating Committee, Greater Toronto Area Urban Structure Concepts Study, prepared for the Committee by IBI Group (Toronto: The Committee, June 1990).

[24]The effective operation of municipal official plans in these select municipalities was discussed with Tonu Tosine. These officials plans were reviewed at the Ministry of Municipal Affairs, Plans Administration Branch with the cooperation of Brian Nixon, Manager, Central and Southwest Ontario.

[25]Regional Municipality of Waterloo, Regional Official Policies Plan, 1985, p. 2-2.

[26]Ibid., p. 6-5.

[27]Regional Municipality of Halton, The Regional Plan - Official Plan for the Halton Planning Area, 1988, p. 73.

[28]Town of Markham, Official Plan (Revised 1987), Adopted by Council on 10 November 1987, p. 123. This plan was approved by the local council in 1987 but has not yet been approved by the Minister of Municipal Affairs. An Ontario Municipal Board hearing is still pending on this plan. Nonetheless, the policies and designations of this plan are used in the interim by this local council. If a legal challenge arose, however, this town would fall back to the use of the 1976 official plan. (The status of this plan was discussed with Michael Montgomery, Planner, Town of Markham Planning Department.)

[29]Ibid.

[30]The general status of metropolitan and regional official plans in Metropolitan Toronto and surrounding regions was discussed with Brian Nixon.

[31]Information and documentation on Maryland's agricultural land preservation policies were obtained from: Maryland, Title 15 - Department of Agriculture, Subtitle 15 - Maryland, Agricultural Land Preservation Foundation, Chapter 01 - "Guidelines for the Maryland Agricultural Land Preservation Program," 1988; Maryland Agricultural Land Preservation Foundation, "Fact Sheet 1 - Agricultural Preservation Districts," 1989 [A pamphlet] (Annapolis, Md: Dept. of Agriculture, n.d.); Maryland Agricultural Land Preservation Foundation, Annual Report 1989 (Annapolis, Md: Dept. of Agriculture, 1989); and discussions between Jerry Richmond and Lynn Carroll, Maryland Department of Agriculture, Annapolis, Md.

[32]Based on: New Jersey, State Agriculture Development Committee, "Farmland Preservation Program Status" (NJDA Budget Hearings, 1 May 1989); and discussion between Jerry Richmond and Barry Frantz, Soil Conservationist, Pennsylvania Department of Agriculture, Harrisburg, Pa.

[33]James E. Peters, "Saving Farmland: How Well Have We Done?," Planning (September 1990): 13.

[34]Based upon extensive discussions with Jeremy Criss, Planning Specialist for Farmland Preservation, Office of Economic Development, Montgomery County, Md. Information was also extracted from an information package received from Jeremy Criss.

[35]Based upon discussions with Jeremy Criss.

[36]Peters, "Saving Farmland," pp. 15-16.

[37]Regional Municipality of Niagara, Planning Development Department, Preserving Agricultural Land in the United States and Canada: Four Case Studies, Policy Plan Review, Pub. #75-10, February 1990, pp. 2-3.

[38]Robert E. Coughlin and John C. Keene, eds., The Protection of Farmland: A Reference Guidebook for State and Local Governments, A Report to the National Agricultural Lands Study (Amherst, Mass.: Regional Science Research Institute, 1981), p. 38.

[39]Thomas L. Daniels and Arthur C. Nelson, "Is Oregon's Farmland Preservation Program Working?" Journal of the American Planning Association (Winter 1986).

[40]Quebec established its "Commission de protection du territoire agricole du Québec" under An Act to Preserve Agricultural Land (1978). The legislation has led to the preparation and approval of local agricultural zone plans. The Commission reviews development within the agricultural zone. In 1989 an independent appeal tribunal was established to hear appeals from decisions of the Commission.

[41]British Columbia, Provincial Agricultural Land Commission, Annual Report, 1988 (Burnaby, BC: The Commission, 1988), p. 3.

[42]British Columbia, Agricultural Land Commission, An Overview Report (Burnaby, BC: The Commission, 1982), p. 2.

[43]British Columbia, Provincial Agricultural Land Commission, Agricultural Land Reserve Statistics (Burnaby, BC: The Commission, January 1988), Table A-2.

[44]B.C., Provincial Agricultural Land Commission, Annual Report, 1988, p. 8.

[45]B.C., Provincial Agricultural Land Commission, Agricultural Land Reserve Statistics, Table A-2.

[46]Daniel Mazmanian with Thaddeus C. Tryzna, Issues and Alternatives: Reasons and Methods for Protecting California Farmlands, California Farmlands Project, Working Paper #3 (Claremont, Ca.: California Institute of Public Affairs, 1983), p. 15.